

FIG. 3

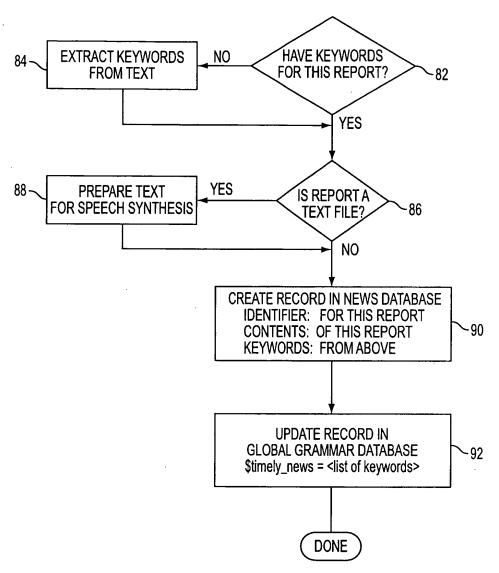


FIG. 4

## **NEWS DATABASE**

<identifier>

<content>

<keyword list>

<when obtained>

## **GLOBAL GRAMMAR DATABASE**

\$timely\_news = <current news keywords>
\$news = ((tell me about [the]) I (what is happening in)) \$timely\_news
\$weather = what is the (forecast for I weather in) \$user\_weather\_cities
\$trains = when are the trains to \$user\_train\_cities
\$flights = when are the flights to \$user\_flight\_cities

## **GLOBAL INFORMATION DATABASE**

\$\\$\text{\$weather\_cities} = Boston | San Francisco | Paris | Tel Aviv | Somerville | ... \$\\$\airline\_cities = Boston | San Francisco | Paris | Tel Aviv | ... \$\\$\text{\$train\_cities} = Boston | San Francisco | Paris | Amsterdam | ...

## **USER SPECIFIC DATABASE**

<type> <contents> <keywords>

type = email, calendar, address book, voice mail
contents = <actual text>
keywords = <type> <value>
ktype = user\_weather\_city, user\_train\_city, user\_flight\_city

FIG. 5

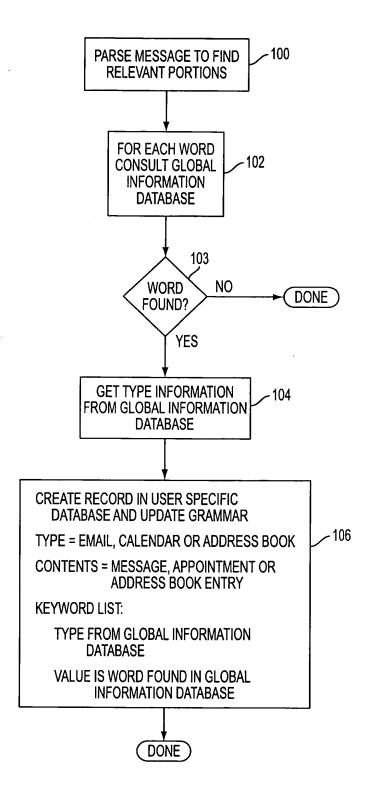


FIG. 6